

diminutive uterus can be made out, and in this case the calf most resembles a cow-calf. Between these two extremes there is every gradation and variation. Similar cases occur in fishes, reptiles, amphibians, birds, &c. I have seen many cases, and numberless instances have been recorded out of curiosity.

These cases show most conclusively how impossible it is for both sets of reproductive organs to attain a functional condition in the same individual. Hypertrophy of one set must arise and establish pre-eminence over the other.

The facts on which the argument rests, that hypertrophy is one of the causes of division of sexes, may be summarized as follows:—

(1) In the lowest forms of animal life, hermaphroditism is the prevailing condition.

(2) Cross-fertilization in hermaphrodites is the rule, and may, as in some of the *Myzostomata*, lead to a division into sexes within the limits of a single group.

(3) Sporadic cases of hermaphroditism are far more common in the lowest forms of life.

(4) If in mammals both sets of organs grow concurrently, the individual is sterile.

(5) Both sets of organs grow equally to a definite period in embryonic life.

(6) Reproduction in Vertebrata, so far as is known, is impossible unless hypertrophy of one set of organs occur.

In conclusion let me point out, that my object in writing this paper is to endeavour to substantiate the doctrine that pathological processes do not exist *per se*, but that in all cases they are to be regarded as physiological processes in excess. I trust the view has been clearly expressed so far as concerns the very important process, hypertrophy.

Lastly, let me emphasize my meaning, that in many cases where organs or sets of organs have undergone hypertrophy to such a degree that pathologists would regard them as abnormal, these exceptional conditions have been inherited, and in this sense *pathology* may be assumed to have played a part among the ordinary processes of evolution in producing race peculiarities.

3. On the Remains of a Gigantic Species of Bird from Lower-Eocene Beds near Croydon. By E. T. NEWTON.

[Abstract.¹]

This paper describes certain bones of a large size obtained by Mr. H. M. Klaassen from the Lower-Eocene strata near Croydon, which are referable to a bird as large and heavy in build as the extinct *Dinornis crassus* of New Zealand.

After a detailed account of each of the specimens, which include parts of three or four tibio-tarsi, and a femur, they are compared

¹ This paper will be published entire in the Society's 'Transactions.'

with the corresponding bones of other Eocene birds, and referred to the genus *Gastornis*, but they are named specifically after their discoverer, *Gastornis klaasseni*. The lower ends of these tibio-tarsi being more perfect than in any of the examples of the genus which have been discovered on the continent, a more detailed comparison with other forms of birds is now possible, and confirms to a great extent the opinions which have been expressed by previous writers as to the affinities of these ancient birds. The tibio-tarsus of *G. klaasseni* is unlike that of any known bird; that of *Dinornis* and the living *Ratitæ*, although approaching it in size, are quite unlike it in form. It is among the Anserine birds that one finds tibio-tarsi with the greatest number of characters in common with these fossils; and if the form of the tibio-tarsus is any indication of the affinities of birds, then *Gastornis* would seem to find its nearest living allies among the old group of the Palmipedes, and more especially in the Anserine division of that group. Notwithstanding this there is evidence which seems to point to *Gastornis* being one of the *Ratitæ*.

The paper concludes with a list of all the known British Eocene Birds, and a short description of the geological strata at Croydon from which these fossils were obtained.

4. Description of a new Species of Hornbill from the Island of Palawan. By R. BOWDLER SHARPE, F.L.S., F.Z.S., &c.

[Received April 14, 1885.]

(Plate XXVI.)

Three specimens of a Hornbill obtained in Palawan by my friend Mr. Everard P. Lempriere appear to belong to an undescribed species of *Anthracoceros*. In Capt. Wardlaw Ramsay's list of Philippine birds, no species of Hornbill has been recorded from Palawan; so that it is interesting to find the family represented in the island, and still more so as the species turns out to belong to the Indo-Malayan genus *Anthracoceros*, thus affording another instance of the Malayan affinities of Palawan.

The present species is easily diagnosed for its completely black wings and entirely white tail, so that the following brief description of it will suffice.

ANTHRACOCEROS LEMPRIERI, sp. n. (Plate XXVI.)

♂ ad. *omnino niger, vix viridescens; alis nigris; cauda omnino alba.* Long. tot. 26, alæ 12, caudæ 10·0, tarsi 2·25.

Hab. in insula Philippinensi "Palawan" dieta.

The bill is yellowish white with the base of the lower mandible black; a bird with a smaller casque I take to be the adult female. The young has an admixture of brown in the plumage and lacks the pointed apical ridge to the casque.